

SITE: TVA Kingston
BREAK: 3.2
OTHER:

STATE OF TENNESSEE DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201 TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Lab ID:

K00002307

Knoxville Regional Laboratory

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code: 327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

10644917

Page 1 of 12

K00002307001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 10:15

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville **TDEC-WPC**

Billing Code: Send Report To: 327.34-20 **TDEC-WPC** TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.71

pH Units

Chlorine, residual:

Conductivity:

48

uMHO

Temperature:

13.26 Dissolved Oxygen: 10.27

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	11	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	11	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	ME	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT UNITS		MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Lab-Sample Number: **Project Name:**

K00002307002 TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: EMORY002.1RO 04/22/2009 11:21

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

TEST: Alkalinity, Total

04/22/2009

14:47

Received By:

ANALYTE

Total Alkalinity

Ken Hitchman

MET	THOD: EPA 310	0.2			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
13	mg/L	3.8	10	M Chen	4/28/2009

Field Determinations

Dissolved Oxygen: 9.88

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.47

13.16

46

pH Units

uMHO

mg/L

CFS

TEST: Hardness, Calcium	MET	METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	15 /	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	ME.	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	39	mg/L	10	10	A Peeples	4/24/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002307003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' downstream from middle dredge pc Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.14

Conductivity:

Temperature:

Other:

Flow:

7.33

47

13.03

pH Units

uMHO

mg/L

CFS

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

11:31 04/22/2009

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	. 14	mg/L	3.8	10	M Chen	4/28/2009	

TEST: Hardness, Calcium	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	15	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	mi/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	ME:	THOD: SM 254				
ANALYTE	RESULT UNITS		MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	61	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

04/22/2009 11:43

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.18

pH Units

Chlorine, residual:

Conductivity:

47

uMHO

Temperature: Dissolved Oxygen: 10.16

13.07

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME.			-		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	14	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	ME'					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	15	mg/L	0.7	1.	M Chen	4/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected: Sampler's Name:

04/22/2009 11:53

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.23

pH Units

Chlorine, residual:

Conductivity:

47

uMHO

Temperature:

12.80

Dissolved Oxygen: 10.10

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total ANALYTE	ME.	-				
	RESULT	UNITS	MDL.	MQL.	ANALYZED BY:	DATE
Total Alkalinity	15	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium ANALYTE	ME'					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	14	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable ANALYTE	ME.					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L ,	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	ME.	•				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

12:05 04/22/2009

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.25

pH Units

Chlorine, residual:

Conductivity:

60

uMHO

Temperature: 13.80

Dissolved Oxygen: 10.05

Other:

Flow:

CFS

mg/L

TEST: Alkalinity, Total ANALYTE	METHOD: EPA 310.2				:	
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	13	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	MET	•				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	14	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	10	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307007

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FB

Station No.:

CLINC002.3RO 12:20

Date/Time Collected: Sampler's Name:

04/22/2009

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

Chlorine, residual: Conductivity:

Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity,		METHOD: EPA 310.2							
ANALYTE			 '	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity		:		U	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	· U	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Suspended	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002307008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FD

Station No.:

CLINC002.3RO

Date/Time Collected: Sampler's Name:

04/22/2009 12:20

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC

Priority Date:

TDEC-WPC

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations :Ha 7.46

Chlorine, residual: Conductivity:

100

uMHO

mg/L

pH Units

Temperature:

14.52

Dissolved Oxygen: 9.89 Other:

Flow:

CFS

TEST: Aikalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	47	mg/L	3.8	10	M Chen	4/28/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	42	mg/L	0.7	1	M Chen	4/27/2009	

TEST: Residue, Settleable	METHOD: SM 2540F							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009		

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	10	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

04/22/2009 12:20

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

:Ha

7.46

pH Units

Chlorine, residual:

Conductivity:

100

uMHO

mg/L

Temperature:

14.52

Dissolved Oxygen: 9.89

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	47	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	40	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	ME:	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	14	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

14:47

Project Site No.:

Sampler Project Name: TVA Ash Spill

5A

Station No.:

TN0005452 Outfall 002

Date/Time Collected: Sampler's Name:

12:34 04/22/2009

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

Received By:

Ken Hitchman

Field Determinations

pH:

7.20

pH Units

Chlorine, residual:

Conductivity:

53

uMHO

Temperature:

14.81

Dissolved Oxygen: 9.91

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	· · ·				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	18	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	15	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009	

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	20	mg/L	10	10	A Peeples	4/24/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.31

Conductivity:

Temperature:

8.05

225

15.05

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Daniple Project

Sampler Project Name: TVA Ash Spill

Project Site No.:

. 6

Station No.:

CLINC004.5RO

Date/Time Collected:

04/22/2009 12:46

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	100	mg/L	3.8	10	M Chen	4/28/2009

TEST: Hardness, Calcium	ME	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	87	mg/L	0.7	1	M Chen	4/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/23/2009	

TEST: Residue, Suspended	Residue, Suspended METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/24/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL. Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

K00002307

Knoxville Regional Laboratory

Lab ID:

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC

Knoxville FO

Knoxville, TN 37921

3711 Middlebrook Pike

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002307001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 10:15 Geoff Klein

County: Sample Matrix: **ROANE - 73** Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH Units 7.71

Chlorine, residual:

Conductivity:

48

Temperature: 13.26 Dissolved Oxygen: 10.27

mg/L

uMHO

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	04/23/2009		•		A Wilson	4/23/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	240	μg/L	2.9	10	A Bass	4/27/2009	

TEST: ICP-MS	MET	THOD: EPA 20	0.8		•	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	154	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	24	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	0.35J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	1.6	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0.28J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	28	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	Ú	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.87J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	3.4J	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 10:15 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH: 7.71 pH Units

Chlorine, residual:

Conductivity:

48

uMHO

Temperature:

13.26 **Dissolved Oxygen: 10.27**

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Mercury	0.068J	μg/L	0.029	0.2	A Wilson	4/28/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 11:21

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.47

pH Units

Chlorine, residual:

Conductivity:

46 13.16 **uMHO**

Temperature: Dissolved Oxygen: 9.88

mg/L

Other:

Flow:

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009				A Wilson	4/23/2009

TEST: ICP		. MET	THOD: EPA 20	0.7			
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	,	690	µg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS		MET	THOD: EPA 200	0.8			
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum		970	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony		U	μg/L	0.33	1	M Pattanayek .	4/25/2009
Arsenic	•	4.6J	· µg/L	0.93	5	M Pattanayek	4/26/2009
Barium		42	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium		0.19J	μg/L	0.11	1 .	M Pattanayek	4/25/2009
Cadmium	,	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium		2.7J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt		0.77J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper		2.6	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead		1.4	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese		35	µg/L	0.42	1	M Pattanayek	4/25/2009
Nickel		2.1	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium		U	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver		0.07J	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium		0.59J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium		6.5	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc		5.3	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 . 11:21

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC** TDEC-WPC

Agency Invoiced: Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

Dissolved Oxygen: 9.88

pH:

7.47

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature: 46

13.16

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U :	µg/L	0.029	0.2	A Wilson	4/28/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' downstream from middle dredge pc Chlorine, residual:

Project Site No.:

Sampler Project Name: TVA Ash Spill

2A

Station No.:

Dredge Plume

Date/Time Collected:

04/22/2009 11:31

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

Received By:

Ken Hitchman

14:47

18

Field Determinations

pH: 7.33 pH Units

Conductivity:

47

uMHO

Temperature: 13.03 Dissolved Oxygen: 10.14

mg/L

Other:

Flow:

CFS.

TEST: Digestion Metals	MET	THOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009		-		A Wilson	4/23/2009

TEST: ICP	MET	THOD: EPA 200	0.7	_		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	620	μg/L	2.9	10	A Bass	4/27/2009.

TEST: ICP-MS		WE.	THOD: EPA 200	0.8		•	
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	:	740	µg/L	6.4	10	M Pattanayek	4/25/2009
Antimony		U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic		3.5J	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	· .	46	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium		0.15J	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	•	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium		2.5J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt		0.65J	μg/L	0.04	. 1	M Pattanayek	4/25/2009
Copper		4.2	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead		1.2	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese		36	μg/L	0.42	` 1	M Pattanayek	4/25/2009
Nickel		1.9	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium		Ū	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver		U	μg/L .	0.03	0.25	M Pattanayek	4/25/2009
Thallium		0.27J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium		·U	μg/L	3.4	. 5	M Pattanayek	4/26/2009
Zinc		5.6	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' downstream from middle dredge pc Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.14

Conductivity:

Temperature:

7.33

13.03

47

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Project Site No.:

Sampler Project Name: TVA Ash Spill

2A

Station No.:

Dredge Plume

Date/Time Collected:

04/22/2009 11:31

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

TEST: Mercury METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Wilson	4/28/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.: Date/Time Collected: EMORY001.9RO

Sampler's Name:

04/22/2009 11:43

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.18

Chlorine, residual: Conductivity:

47

uMHO

pH Units

Temperature: Dissolved Oxygen: 10.16

13.07

mg/L

Other:

Flow:

TEST: Digestion Metals						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009				A Wilson	4/23/2009

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	320	μg/L	2.9	10	A Bass	4/27/2009		

TEST: ICP-MS	ME'	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	320	µg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	. U	μg/L	0.93	. 5	M Pattanayek	4/26/2009
Barium	28	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium	2.0J	μg/L	2.0	· 5	M Pattanayek	4/25/2009
Cobalt	0.29J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	1.9	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0.38J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	33	μg/L	0.42	1 '	M Pattanayek	4/25/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.14J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	. 4.1J	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B -

Station No.:

Date/Time Collected:

EMORY001.9RO 04/22/2009 11:43

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 **TDEC-WPC**

Send Report To: **Agency Invoiced:**

TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 . 14:47

U

Received By:

TEST: Mercury ANALYTE

Mercury

Ken Hitchman

ME.	THOD: EPA 24	5.1			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE

Field Determinations

Dissolved Oxygen: 10.16

Chlorine, residual:

Conductivity:

Temperature:

Other:

Flow:

7.18

47

13.07

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL MDL - Method Detection Limit

MQL - Method Quantitation Limit U - Undetected

μg/L 0.029 0.2 A Wilson 4/28/2009

K00002307005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY001.7RO

Date/Time Collected: Sampler's Name:

04/22/2009 11:53 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water Knoxville

Sampling Agency: **Billing Code:** Send Report To:

TDEC-WPC 327.34-20 TDEC-WPC **TDEC-WPC**

Priority Date:

Agency Invoiced:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.23

pH Units

uMHO .

Chlorine, residual:

Conductivity: Temperature: 47 12.80

Dissolved Oxygen: 10.10

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009			•	A Wilson	4/23/2009

TEST: ICP	: ICP METHOD: EPA 200.7								
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE			
iron	470	µg/L	2.9	10	A Bass	4/27/2009			

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	310	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	. U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	28	μg/L	2.5	_. 5	M Pattanayek	4/25/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium	2.2J	µg/L	2.0	· 5	M Pattanayek	4/25/2009
Cobalt	0.36J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	1.0	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0.43J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	33	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	···	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	3.1J	μg/L	1.9	5	M Pattanayek	4/25/2009

Project Name:

K00002307005

Sample Description:

TVA-Ash Spill Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected: Sampler's Name:

04/22/2009 11:53

County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations 7.23 pH Units Chlorine, residual: **uMHO**

47 Conductivity:

Temperature: 12.80

Dissolved Oxygen: 10.10 Other:

mg/L

Flow: **CFS**

TEST: Mercury	METHOD: EPA 245.1							
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	•	U	μg/L	0.029	0.2	A Wilson	4/28/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 12:05 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: Billing Code:

Knoxville **TDEC-WPC** 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.25

pH Units

Chlorine, residual:

Conductivity:

60 13.80

uMHO

Temperature: Dissolved Oxygen: 10.05

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009				A Wilson	4/23/2009

TEST: ICP	MI	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	490	µg/L	2.9	10	A Bass	4/27/2009		

TEST: ICP-MS	·ME	THOD: EPA 200	0.8		•	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	380	µg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1 ·	M Pattanayek	4/25/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	28	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	· u	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	· U	μg/L	0.41	1 -	M Pattanayek	4/25/2009
Chromium	2.4J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	0.38J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	2.3	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0.52J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	1.3J	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.09J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	4.4J	μg/L	1.9	€5	M Pattanayek	4/25/2009

K00002307006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

04/22/2009 12:05

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code: Send Report To:

TDEC-WPC 327.34-20 TDEC-WPC

Agency invoiced: **Priority Date:**

Date/Time Received:

04/22/2009

TDEC-WPC

14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.25

pH Units

Chlorine, residual:

Conductivity:

60

uMHO

Temperature:

13.80

Dissolved Oxygen: 10.05

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL.	ANALYZED BY:	DATE		
Mercury	U	μg/L	0.029	0.2	A Wilson	4/28/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307007

Project Name: Sample Description:

Date/Time Collected:

TVA-Ash Spill Clinch River mile 2.3 near Hwy 70 bridge

14:47

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FB

Station No.:

CLINC002.3RO 04/22/2009 12:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

Received By:

Ken Hitchman

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

TEST: Digestion Metals	MET	,				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/23/2009				A Wilson	4/23/2009

TEST: ICP METHOD: EPA 200.7								
ANALYTE		RESULT	UNITS	MDL	MQL.	ANALYZED BY:	DATE	
Iron		U	· μg/L	2.9	10	A Bass	4/27/2009	

TEST: ICP-MS	, MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U .	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	U	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	· U	μg/L	0.11	1.	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium ~	2.4J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	U	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	· U	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead .	. U	` μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	U	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	U.	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	U	μ g/ L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.06J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	. U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	· U	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307007

Project Name: Sample Description: TVA-Ash Spill Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FB

Station No.:

CLINC002.3RO

Date/Time Collected: Sampler's Name:

04/22/2009 12:20

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

Date/Time Received:

TDEC-WPC

Priority Date:

04/22/2009

14:47

Received By:

TEST: Mercury

Ken Hitchman

METHOD: EPA 245.1	MIDI	MOI	4 54 4 4	VZED	_
METUOD, EDA 245 4					

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity: Temperature:

pH:

Other:

Flow:

ANALYZED BY: DATE **ANALYTE** RESULT UNITS MDL MQL U 0.029 0.2 A Wilson 4/28/2009 Mercury μg/L

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Date/Time Collected:

Project Site No.:

5FD

Station No.:

CLINC002.3RO

Sampler's Name:

04/22/2009 12:20 Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville TDEC-WPC

Sampling Agency: **Billing Code:** Send Report To:

Agency invoiced:

327.34-20 **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.46

pH Units

Chlorine, residual:

Conductivity:

100

uMHO

Temperature: 14.52 **Dissolved Oxygen: 9.89**

Other:

Flow:

mg/L **CFS**

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	04/23/2009			•	A Wilson	4/23/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	350	µg/L	2.9	10	A Bass	4/27/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8		, A		
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE	
Aluminum	280	µg/L	6.4	10	M Pattanayek	4/25/2009	
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009	
Arsenic	Ū	μg/L	0.93	5	M Pattanayek	4/26/2009	
Barium	31	μg/L	2.5	5	M Pattanayek	4/25/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009	
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009	
Chromium	2.1J	μg/L	2.0	5	M Pattanayek	4/25/2009	
Cobalt	0.35J	μg/L	0.04	1	M Pattanayek	4/25/2009	
Copper	1.9	μg/L	0.38	1	M Pattanayek	4/25/2009	
Lead	0.43J	μg/L	0.10	1	M Pattanayek	4/25/2009	
Manganese	40	μg/L	0.42	1	M Pattanayek	4/25/2009	
Nickel	1.6	µg/L	0.25	1	M Pattanayek	4/25/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	4/26/2009	
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009	
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	4/25/2009	
Vanadium	10	μg/L	3.4	5	M Pattanayek	4/26/2009	
Zinc	2.8J	μg/L	1.9	5	M Pattanayek	4/25/2009	

K00002307008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near hwy 70 bridge

Project Site No.:

Sampler Project Name: TVA Ash Spill

5FD

Station No.:

CLINC002.3RO

Date/Time Collected: Sampler's Name:

04/22/2009 12:20

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code: Send Report To:

TDEC-WPC 327.34-20 TDEC-WPC

TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations pH: 7.46 pH Units Chlorine, residual: **uMHO**

100 Conductivity: Temperature: 14.52

Dissolved Oxygen: 9.89

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
U	µg/L	0.029	0.2	A Wilson	4/28/2009	
		RESULT UNITS	RESULT UNITS MDL	RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: CLINC002.3RO

Sampler's Name:

04/22/2009 12:20

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.46 pH Units

Chlorine, residual:

Conductivity:

100

uMHO

Temperature: 14.52

Dissolved Oxygen: 9.89

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT UNITS MDL MQL				ANALYZED BY:	DATE	
Digestion Metals	04/23/2009	•			A Wilson	4/23/2009	

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	380	μg/L	2.9	10	A Bass	4/27/2009	

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Aluminum	310	µg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	U .	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium ·	32	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium	2.1J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	0.37J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	3.1	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0. 54 J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	41.	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.9	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	` U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	3.9J	μg/L	1.9	. 5	M Pattanayek	4/25/2009

K00002307009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

CLINC002.3RO

Date/Time Collected:

04/22/2009 12:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced:

327.34-20 **TDEC-WPC TDEC-WPC**

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

Field Determinations

pH:

7.46

pH Units

Chlorine, residual:

Conductivity:

100

uMHO

Temperature:

14.52

Dissolved Oxygen: 9.89

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	υ	μg/L	0.029	0.2	A Wilson	4/28/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

Clinich River I VA Dischar

Project Site No.:

5A

Station No.:

TN0005452 Outfall 002

Date/Time Collected:

04/22/2009 12:34

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

Field Determinations

pH: 7.20

Chlorine, residual:

Conductivity:

53 14.81 uMHO

pH Units

Temperature:

Dissolved Oxygen: 9.91

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	04/23/2009				A Wilson	4/23/2009	

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	520	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	. ME:	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	540	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	2.7J	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	. 41	μg/L	2.5	5	M Pattanayek	4/25/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/25/2009
Chromium	2.6J	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	0.53J	μg/L	0.04	1	M Pattanayek	4/25/2009
Copper	4.4	μg/L	0.38	1	M Pattanayek	4/25/2009
Lead	0.91J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.7	µg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	Ü	μg/L	1.3	. 5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	6.5	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	4.9J	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill **Project Site No.:**

5A

Station No.:

TN0005452 Outfall 002

Date/Time Collected:

04/22/2009 12:34

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

TEST: Mercury

Ken Hitchman

			4		
ME	THOD: EPA 245	.1			
		1451	140	 5 5 7	

Field Determinations

Dissolved Oxygen: 9.91

Chlorine, residual:

Conductivity:

Temperature:

7.20

53

14.81

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE U μg/L 0.029 0.2 A Wilson 4/28/2009 Mercury

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002307011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

04/22/2009 12:46

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009 14:47

Received By:

Ken Hitchman

Field Determinations

pH Units

Conductivity:

225

8.05

uMHO

Temperature:

15.05

Dissolved Oxygen: 10.31

mg/L

Other:

Flow:

TEST: Digestion Metals	on Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	04/23/2009		······································		A Wilson	4/23/2009	

TEST: ICP	METHOD: EPA 200.7						METHOD: EPA 200.7		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE			
Iron	300	μg/L	2.9	10	A Bass	4/27/2009			

TEST: ICP-MS	ME [*]	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	160	μg/L	6.4	10	M Pattanayek	4/25/2009
Antimony	, U	μg/L	0.33	1	M Pattanayek	4/25/2009
Arsenic	Ú	μg/L	0.93	5	M Pattanayek	4/26/2009
Barium	34	μg/L	2.5	. 5	M Pattanayek	4/25/2009
Beryllium	Ū	μg/L	0.11	1	M Pattanayek	4/25/2009
Cadmium	U	μg/L ·	0.41	1	M Pattanayek	4/25/2009
Chromium ·	. U	μg/L	2.0	5	M Pattanayek	4/25/2009
Cobalt	0.27J	μg/L	0.04	1.	M Pattanayek	4/25/2009
Copper	2.3	μg/L	0.38	1 .	M Pattanayek	4/25/2009
Lead	0.44J	μg/L	0.10	1	M Pattanayek	4/25/2009
Manganese	42	μg/L	0.42	1	M Pattanayek	4/25/2009
Nickel	1.9	μg/L	0.25	1	M Pattanayek	4/25/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/26/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/25/2009
Thallium	0.05J	μg/L	0.03	1	M Pattanayek	4/25/2009
Vanadium	5.7	μg/L	3.4	5	M Pattanayek	4/26/2009
Zinc	3.1J	μg/L	1.9	5	M Pattanayek	4/25/2009

K00002307011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.31

Conductivity:

Temperature:

8.05

225

15.05

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Daring of Olda No.

Sampler Project Name: TVA Ash Spill

Project Site No.:

6

Station No.:

CLINC004.5RO

Date/Time Collected:

04/22/2009 12:46

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

EFU.

Knoxville

Sampling Agency:
Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received:

04/22/2009

14:47

Received By:

Ken Hitchman

TEST:	Mercury	METHOD: EPA 245.1

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Wilson	4/28/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit